FARM BUREAU LOUISIANA
"Voice of Louisiana Agriculture"

Louisiana Farm Bureau Federation, Inc.

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July 27, 2011

The Honorable Julius Genachowski
Chairman
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

RE: LightSquared Subsidiary LLC Request for Modification of Its Authority for an Ancillary Terrestrial Component File No. SAT-MOD-20101118-00239

IB Docket Number: 11-109

Dear Chairman Genachowski:

The Louisiana Farm Bureau Federation (LFBF) submits comments to address significant problems with a recent Federal Communications Commission (FCC) Order and Authority DA, 11-133 granting LightSquared Subsidiary LLC, a waiver of the "integrated service" rule as it relates to LightSquared Subsidiary LLC's plans to offer Commercial Mobile Satellite Service on its L-Band MSS frequencies. The Public Notice states that the interference concerns must be completed to the Commission's satisfaction before LightSquared will be granted authorization to offer commercial service. Our comments are to address FCC process on addressing this issue, the unresolved LightSquared interference issues with GPS devices, and recognition and proper weighting of the value of GPS technology to our nation and U.S. agriculture.

We recommend that the FCC consider our comments and make a decision on the LightSquared issue not as a frequency authorization issue, but rather that the time has come where the FCC must establish, test and implement protection parameters in authorizing frequencies and transmissions that protect the huge role GPS technology plays across our nation in providing lifesaving guidance, safety, and beneficial efficiencies for our country. GPS technology is a valuable national utility that relies on a reliable, interference-free L-Band low-power frequency platform for GPS receivers. Broadening availability of broadband 4G service should not come at the expense of existing GPS technology.

FCC Process: Technical Working Group Structure

The Louisiana Farm Bureau Federation questions the FCC process used to determine interference with GPS systems, where the applicant LightSquared has been allowed to organize and co-chair the Technical Working Group. We strongly feel that an impartial panel of experts should have been selected by the FCC to properly study and evaluate the study parameters and evaluate the results of the GPS interference studies without influence from LightSquared Subsidiary LLC.

In viewing the results of the Technical Working Group Study, the study lacked the detailed analysis using real world implementation models. The Technical Working Group used lower power transmission levels than what would actually be used by LightSquared transmissions which incorrectly lowered the maximum distance GPS interference showed in tests, and their modeling used fewer towers than would actually be used by LightSquared to determine the severity of GPS interference. We feel that an independent Technical Working Group would have less influence within the Technical Working Group from LightSquared Subsidiary LLC to take the time necessary to produce a more representative analysis of the actual frequency interference experienced by GPS devices from LightSquared transmissions from numerous cellular towers that would be provided better guidance for the FCC. We strongly feel that too much responsibility has been placed on GPS providers and users to prove the severity of GPS interference problems in viewing the results of Technical Working Group Study.

GPS Interference Has Not Been Avoided or Mitigated

Regardless of the study, according to the "*FCC Technical Working Group Report",* as well as the "*GPS Interference Report of Clearwire Corporation"*, and the "*Assessment of LightSquared Terrestrial Broadband System Effects on GPS Receivers and GPS Applications"* and several other studies, all studies indicate that LightSquared transmissions cause widespread interference across their L-Band MSS frequencies to GPS devices and equipment.

More importantly, GPS interference was still noted in several tests when applying the LightSquared 3 recommendations for avoiding interference.

1. **Lower Power**: Several tests showed GPS interference when transmitting within LightSquared frequencies at lower power.
2. **Standstill in Upper 10 MHz of Spectrum**: Several test also showed GPS interference when LightSquared transmissions avoided transmissions in the upper 10 MHz bandwidth of their frequency spectrum (within 10 MHz of the top of their spectrum - 1559 MHz)
3. **Operate Terrestrial Transmissions in Lower 10 MHz of Spectrum**: Several tests showed significant GPS interference even when LightSquared transmitted in the bottom 10 MHz of their frequency spectrum.

It is clear that the FCC requirement, that LightSquared must prove that they have a plan that can be implemented that can stop GPS interference or will mitigate GPS interference, has not been achieved.

More importantly, it is doubtful that the architecture of the LightSquared transmission system can be modified sufficiently to avoid GPS interference because of the sensitivity of GPS receivers and the power of LightSquared tower transmissions that are 1 billion times stronger than the signal strength of satellite-based L-Band transmissions to GPS receivers.

GPS: "It is all or nothing"

In viewing the results of numerous tests performed; in addition to test that indicate total GPS signal loss within 13 miles of a LightSquared transmission tower, many test reveal periodic or intermittent GPS interference at far greater distances from a LightSquared transmission tower.

The crux is that a GPS device that loses signal; or intermittently loses signal for periods of time due to interference from higher-powered LightSquared transmissions would be inherently unreliable and totally useless to farmers, aviation, marine and emergency responders as well as most that use a GPS device in the US.

The reliability of the GPS guidance systems is critical to their value. In agriculture, many farmers and others in our industry have invested thousands of dollars for GPS systems that are accurate to 1 inch such as those who have purchased John Deere Starfire systems and other GPS systems that provide similar accuracies.

In agriculture, a farmer cannot have a GPS auto-steer tractor operating without a reliable GPS L-Band signal. This is because even intermittent GPS interference or jamming, especially in Louisiana agriculture, not only eliminates the utility of the GPS device, but also compromises the safety of farmers and their employees where our GPS-guided machinery operate in fields in close proximity to water bodies, tributaries, pipelines, highways and overhead power lines.

The Value and Investments in GPS Systems in Louisiana Agriculture

It was recently estimated that a 50% reduction in RTK precision would cost agriculture $10 billion and 100% interference to RTK guidance in agriculture represented a $20 billion loss to agriculture.

The loss to individual farmers is just as profound if partial or complete GPS precision or guidance is lost. The Louisiana Farm Bureau Federation, Inc. recently held a meeting with many Louisiana farmers and crop consultants representing a wide variety of commodities. At our meeting, all farmers that commented indicated that each farmer had a minimum investment of $50,000 and many individual farmers had investments in

GPS precision agriculture equipment and devices of well over $100,000. For agriculture, there is no alternative guidance frequency that can guide and operate within our existing GPS precision agriculture equipment and devices. More importantly, with high petroleum prices, we simply cannot afford to turn back the hands of time and spend thousands of dollars in additional chemicals, fertilizers and fuel due to the loss of our ability to precision and prescriptively apply inputs with precision GPS-driven applications.

GPS in Agriculture: Important Issues to Consider

There is far more at play in agriculture when considering the value of a reliable GPS L-Band signal and the other benefits of GPS precision agriculture equipment and devices.

Listed below are a few issues that we hope the FCC will consider when evaluating the impact of LightSquared Subsidiary LLC's application for modification of its authority for Ancillary Terrestrial Component of L Band 1 MSS and the interference it will cause to GPS equipment and devices.

Environmental Benefits of GPS Precision Agriculture

GPS Guided Precision Agriculture Equipment is not only a benefit to farmers but to all U.S. citizens. Farmers can now apply pesticides, herbicides and fertilizers to their fields without overlapping each band of application(s) due to the precision of GPS guidance on our application equipment. This eliminates tons of pesticides, herbicides and fertilizer from being introduced into our environment from excess chemicals and fertilizer applied on 1-3 feet of overlap on every pass in the field. This reduces the number of passes made in the field which substantially reduces fuel consumption from tractors and farm equipment and reduces air pollution, an added environmental benefit.

Also GPS Precision Agriculture Application Equipment calibrates application of pesticides, herbicides and fertilizer to reduce the application rate when ground speed decreases due to load, hills or tire slippage in wet conditions. GPS Precision Agriculture Application Equipment also automatically stops chemical and fertilizer application when the equipment reaches field boundaries and environmental buffer zones. Again, proper GPS- driven calibration and GPS triggered auto-stop cut off of applications all assist in keeping tons of excess chemicals and fertilizer from being introduced into our environment.

GPS Precision Agriculture Equipment also permits farmers to prescription apply pesticides, herbicides and fertilizer which also tremendously reduces introduction of these products into the environment. Prescription applications of fertilizer are applied according to soil test that locate areas in a field where different levels of fertilizers and nutrients are needed and then the different fertilizer/nutrient application levels are mapped into GPS guided application equipment and applied according to prescription to each region of the field. The same is true for prescription applications of herbicides and pesticides where weed and pests in a field are identified and mapped onto GPS maps

and the herbicides and pesticides are applied only to areas of the field that require the application, applying the exact amount needed, saving tons of these products from being introduced into the environment.

GPS Precision Agriculture Equipment is a primary tool for farmers' participation in Conservation Stewardship Programs where farmers minimize tillage and reduce chemical and fertilizer usage by prescription GPS applications and reduce water utilization by use of GPS land leveling equipment to precision level fields to reduce the amount of water necessary to irrigate our agricultural crops.

These are just a few of the environmental benefits that have been made possible by GPS Precision Agriculture, an environmental benefit to all people and all species that exist in our environment.

GPS Precision Agriculture is an Important Part of Food Safety

GPS Precision Agriculture plays a large part in compliance with the recent passage of U.S. Food Safety Legislation. The key is traceability. Farmers are responsible to know and have records of the time and location of chemical applications and the location of where crops were harvested so we are able to trace back the origin of crop contamination if such an event arises.

GPS plays a large part not only in guidance, but in supplying a verifiable record of where and when spray applications occurred and where crops originated from. Records derived from GPS Precision Agriculture Equipment play an important part in our compliance with Food Safety Legislation. Our crop consultants also utilize GPS equipment to locate fields, and their GPS coordinates are used to keep accurate field records of chemical application on each field for their farmers.

Safety

GPS Precision Agriculture Guidance Systems also contribute greatly to farm safety by GPS guidance steering farm equipment away from power lines, tributaries, lakes, highways, field edges and drop offs, as well as petroleum and natural gas pipelines. In Louisiana, GPS technology is used to locate pipelines as part of "Louisiana One Call", a State requirement to mark and avoid digging near pipelines and underground utilities.

Conclusion

GPS Precision Agriculture Guidance Systems are critical to Louisiana farmers and Louisiana agriculture. From an investment point of view, our farmers stand to lose thousands of dollars if their GPS equipment does not operate properly due to interference from LightSquared Subsidiary LLC L-Band transmissions. Properly operating GPS Precision Agriculture Equipment allows our farmers to save thousands in reducing the quantity of herbicides, pesticides and fertilizer applied due to the efficiency of GPS driven applications of these products.

Significant environment and conservation benefits are gained by reducing the introduction of these products into our environment and the efficiencies gained by this technology. Significant fuel saving and a reduction in air pollution all result from use of GPS guided agricultural equipment. GPS equipment in agriculture plays a major role in traceability of our food supply and U.S. Food Safety with verifiable GPS evidence. Safety in agriculture is enhanced by reliable GPS guidance that helping keep our farm equipment away from dangerous power lines, pipelines, lakes, tributaries and roads.

The benefits of reliable GPS technology to Louisiana agriculture and agriculture in the United States provide social and monetary benefits that far exceed $20 billion dollars.

While we support increasing broadband access to underserved areas, it appears that the time has come where the FCC recognize that LightSquared Subsidiary LLC's application for modification of its authority represents a complete shift in the usage of the L Band 1 MSS spectrum from a very low power space to earth signal spectrum to a fixed high power terrestrial service that will render a major guidance utility used in the United States useless.

No tests have proven that LightSquared transmissions can be modified to avoid interference with GPS receivers used by agriculture and a multitude of industries and citizens across America. At this time, the two systems cannot co-exist adjacent on the L Band 1 MSS spectrum traditionally reserved for GPS receivers.

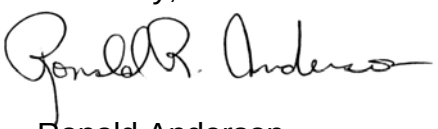
Therefore, the Louisiana Farm Bureau Federation, Inc. after careful evaluation, strongly requests that the FCC reconsider and resend the conditional waiver for LightSquared Subsidiary LLC and not approve authorization to modify their authority to operate a 4G LTE broadband in the 1525-1559MHz L Band 1 MSS spectrum.

The FCC should not cave in to LightSquared Subsidiary LLC investor pressure because GPS technology is far more valuable to our country than expanded 4G service.

We sincerely appreciate the opportunity to comment on this issue and ask that the FCC consider our request in their decision-making process.

If you have any questions regarding our comments, please contact Brian Breaux from my staff at 225-922-6210 or e-mail him at brianb@lfbf.org .

Sincerely,



Ronald Anderson,
President